

Date: Mon, 4 Apr 94 04:30:16 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V94 #90  
To: Ham-Ant

Ham-Ant Digest                      Mon, 4 Apr 94                      Volume 94 : Issue    90

Today's Topics:

                    "The Pounder"  
2-meter J Pole Antenna Plans (3 msgs)  
                    AEA Hot Rot whip for HT  
                    CQ Article on HS-100  
                    CQ Article on TH11DX  
                    Cushcraft R7 Vertical  
How to base-feed half-wave vertical?  
                    Info wanted on HT antennas

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 3 Apr 1994 07:44:57 -0400  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!news.intercon.com!news1.digex.net!  
access.digex.net!not-for-mail@network.ucsd.edu  
Subject: "The Pounder"  
To: ham-ant@ucsd.edu

In the current edition of the ARRL's Antenna Book, there is an article on  
the construction of a log periodic antenna called "The Pounder." Because  
it's small, lightweight, has some gain and can be directed, it would suit  
several of my needs.

How-some-ever.

It also looks like a dead short.

I've read the article several times and cannot understand how the left  
side is kept separated from the right. I know that the construction  
calls for a 1/4 inch peice of Plexiglas between the two pieces of

aluminum angle, but nowhere does it tell how to attach the aluminum angle to the Plexiglas without touching the other piece of aluminum.

Has anyone made this antenna and can you help with my question?

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Date: Sun, 3 Apr 1994 07:48:37 GMT  
From: news.doit.wisc.edu!saimiri.primate.wisc.edu!hpg30a.csc.cuhk.hk!uxmail!  
dma039.ust.hk!ee\_hflo@decwrl.dec.com  
Subject: 2-meter J Pole Antenna Plans  
To: ham-ant@ucsd.edu

Robert C. Walker (an678@FreeNet.Carleton.CA) wrote:

: Anybody suggest to me a good place to find the plans for a 2-meter J  
: Pole antenna...I know it's not that difficult to build but need measure-  
: ments, etc.

Please refer to ARRL Handbook.

: If possible, an e-mail reply would be great since I don't check inot  
: this group all the time..

: Thanks

Michael Lo

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Date: Sun, 3 Apr 1994 19:36:25 GMT  
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!csus.edu!netcom.com!  
wa2ise@network.ucsd.edu  
Subject: 2-meter J Pole Antenna Plans  
To: ham-ant@ucsd.edu

The 2M twinlead J pole plans probably should be in this newsgroup's FAQ file (if it isn't already!). Also note that you can scale up or down the lengths to do other bands like 222 and 440. I even made one for the 100MHz FM broadcast band. You just need  $3/4$  and  $1/4$  wavelength, just do a ratio  $2M\_lengths/freq = new\ lengths\ for\ freq$ . Worked for me.

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Date: 4 Apr 94 02:42:30 GMT  
From: dog.ee.lbl.gov!hellgate.utah.edu!cc.usu.edu!NewsWatcher!  
user@ucbvax.berkeley.edu  
Subject: 2-meter J Pole Antenna Plans

To: ham-ant@ucsd.edu

In article <1994Apr3.074837.3941@uxmail.ust.hk>, ee\_hflo@dma039.ust.hk (Michael Lo) wrote:

> Robert C. Walker (an678@FreeNet.Carleton.CA) wrote:  
>  
>  
> : Anybody suggest to me a good place to find the plans for a 2-meter J  
> : Pole antenna...I know it's not that difficult to build but need measure-  
> : ments, etc.  
>  
> Please refer to ARRL Handbook.  
>

can you tell me what page in the 1994 ARRL Handbook I can find it ?

> : If possible, an e-mail reply would be great since I don't check inot  
> : this group all the time..  
>  
> : Thanks  
>  
> Michael Lo

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Date: 3 Apr 1994 18:18:20 GMT  
From: ihnp4.ucsd.edu!usc!sol.ctr.columbia.edu!newsxfer.itd.umich.edu!ncar!csn!col.hp.com!bobw@network.ucsd.edu  
Subject: AEA Hot Rod whip for HT  
To: ham-ant@ucsd.edu

Stephen C. Trier (trier@odin.ins.cwru.edu) wrote:  
: In article <ah301-290394073455@sy\_j.pgh.wec.com>,  
: Jerry Sy <ah301@yfn.ysu.edu> wrote:  
: >I tested it on an swr meter and its swr is > 3, my rubber duck is < 1.5 !

: You can tune it by adjusting the length, checking it on the meter until  
: you find something < 1.5. Scribe that length into the side of the antenna  
: so you can find it again without the meter.

: BTW, there is usually no need to cross-post so widely. I've set followups  
: to just rec.radio.amateur.antenna.

When I evaluated the Hot Rod (tm) some years ago, its tuning was quite broad, so I would expect that fine tuning it with the length should not be necessary. (Evaluation was performed by sweeping it

with a network analyzer.)

Also, when I checked a variety of rubber ducks for SWR they never had anything close to  $SWR < 1.5$ , so I suspect that measurement is erroneous. Typically, they had SWR below 2.0 at some frequency for about 1 usec, then any movement or shift in the ether caused the resonant frequency to jump outside the ham band. Has to do with a shortened 1/4-wave without a real ground plane.

Bob Witte / bobw@col.hp.com / Hewlett Packard PMO / KB0CY / (719) 590-3230

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Date: 3 Apr 94 15:07:02 GMT  
From: agate!howland.reston.ans.net!gatech!wa4mei!ke4zv!gary@ucbvax.berkeley.edu  
Subject: CQ Article on HS-100  
To: ham-ant@ucsd.edu

In article <5qy0Jtk.cecilmoore@delphi.com> Cecil Moore <cecilmoore@delphi.com> writes:

>Here's a quote from W1ICP's review of the \$290 HS-100 mobile antenna  
>in CQ, April '94 issue: "In my long career of working with antennas  
>I have only seen a few that were completely tuned from the operating  
>position. By tuned, I mean an antenna that is tuned to resonance so  
>that all reactance in the antenna feedpoint is cancelled out at the  
>antenna."

>

>Doesn't the conjugate match provided by my antenna tuner cause  
>maximum power transfer and tune the antenna system to resonance "so  
>that all reactance in the antenna feedpoint is cancelled out at the  
>antenna", (assuming near lossless transmission lines). The antenna  
>tuner does not change the SWR on the transmission line but it does  
>neutralize the reactance at the antenna feedpoint because the local  
>conjugate match at the antenna tuner is transformed all the way to  
>the antenna. Anywhere you look, up and down the transmission line,  
>you see  $-jX$  one direction and  $+jX$  the other. As Maxwell said,  
>"My Transmatch Really Does Tune My Antenna."

Maxwell is, as usual, correct. The problem is that people have become fixated on the idea that a 1:1 SWR indicates resonance, and fixated on the related idea that a 1:1 SWR on the transmission line is required for \*matching\* the transmitter to the load. Neither is necessarily true. Instead both are very special cases of more general resonating and matching solutions. You can indeed tune out the reactance of an antenna by introducing, at the transmitter end, a reactance of the appropriate sign, and allowing for the transforming action of the feedline as transformer, so that a reactance of the right magnitude and sign appears at the antenna feedpoint to resonate the antenna. And you can match the transmitter

to the antenna with a non-unity SWR on the transmission line. That just means you're using the transmission line as \*part of the matching network\* in the form of a transmission line transformer.

The last time this came up, people complained that you can't use 50 ohm line as a transmission line transformer to match a 50 ohm load, but of course you can. That's just the degenerate case where the transformer action is 1:1. In all other cases, the antenna \*isn't\* a 50 ohm load (that's the problem), so the 50 ohm cable does act as \*part\* of the matching network in transforming the impedance to match whatever the antenna \*is\* presenting as its input impedance to the transmitter's output impedance. (The plate and load controls on the transmitter, or the adjustments on the tuner which replace those controls on the current generation of adjustment deficient radios, does the rest.)

Additional losses due to SWR on the transmission line are almost always less than the losses incurred by inserting a lumped coil in the antenna, or using other forms of fixed lumped networks at the antenna for matching. That's assuming decent quality coax, of course. RG-58 need not apply.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: 3 Apr 94 19:47:47 GMT  
From: dog.ee.lbl.gov!agate!news.Brown.EDU!noc.near.net!news.delphi.com!  
usenet@ucbvax.berkeley.edu  
Subject: CQ Article on TH11DX  
To: ham-ant@ucsd.edu

Someone also reminded me that if you really want a multiband beam, a Quad has more gain at 1/3 the price of the TH11DX.

73, KG7BK, CecilMoore@delphi.com

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Date: 3 Apr 94 23:26:22 GMT  
From: dog.ee.lbl.gov!ihnp4.ucsd.edu!sdd.hp.com!hpscit.sc.hp.com!  
cupnews0.cup.hp.com!jholly@ucbvax.berkeley.edu  
Subject: Cushcraft R7 Vertical

To: ham-ant@ucsd.edu

Jeffrey D. Angus (jangu@skyld.grendel.com) wrote:

: In article <2ncmtr\$b1e@pace2.cts> cdsorens@mtu.edu writes:

: > I am intertested in hearing from people who own or use the Cushcraft  
: > R7 Vertical antenna. I am seriously considering buying one, and I would  
: > like to know what success, if any you have had with this antenna.

: I have their AP-8, it is the one onebody knows about...

: > It is my understanding that the R7 is designed especially for those who  
don't

: > have room for a ground system, like in a condo or 2nd story apartment.  
: >

: > I DO have room for a ground system, so perhaps there is a different  
: > vertical that would suit me better. I am interested in 80-10.

: They claimed it didn't need radials either. But it assembled with the 10  
: meter section (the one closest to the connector) 3 feet shorter than the  
: chart before it would load correctly on all 8 bands. Once I got that  
: straightened out it still didn't radiate very well. The power must have  
: been going somewhere, but it sure wasn't going towards any radios I knew  
: about.

: I bought their radial kit (APR-8 I think) and suddenly the antenna works  
: just like you would expect from a vertical. Poorly, but still better than  
: terrible. And yes, I had to add the 3 feet back to the bottom section.

: 73 es GE from Jeff

The AP-8 does not need radials? interesting. The AP-8 is a quarter wave vertical and DOES need radials very much. Otherwise it does not work. The R-7 on the other hand is a half wave antenna and radials are not needed. I know an owner of a R-7. It works, but the 30-m and 40-m traps blow and he has trouble with them. I own a R-5. It works fine, but then the TA-33 gets 1 to 2 S units more signal. I can work stations on the TA-33 that I can't even hear on the R-5. I also use a HF-2V, a quarter wave vertical for 80/40. I have 16 radials and it works ok, but a beam at 70 foot will beat me.

The bandwidth of the R-7 is very narrow on 40 meters, you will need a tuner. Given limited space, I would opt for the R-7 over the AP-8. If I can lay down 16 or more radials, at least 30 foot long, I would opt for a AP-8 or the like. Do not expect much on 80, 40 will be better, the higher bands should play ok. But you will never beat a beam.

Jim Hollenback, WA6SDM

jholly@cup.hp.com

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Date: 3 Apr 94 19:17:07 GMT  
From: dog.ee.lbl.gov!agate!news.Brown.EDU!noc.near.net!news.delphi.com!  
usenet@ucbvax.berkeley.edu  
Subject: How to base-feed half-wave vertical?  
To: ham-ant@ucsd.edu

Rajiv Dewan <rdewan@casbah.acns.nwu.edu> writes:

>>I'm looking for advice on the best way to match coax to the bottom of a  
>>half-wave vertical. Cushcraft does this for the multi-band R-5 with some type

W5GYJ's method is a great way to feed this antenna. A not as great way but  
easier method is to end feed the antenna with 450 ohm ladder line with one  
conductor open. This is like the Zeppelin airships used. Be sure to keep  
the transmission line a few feet above ground and use an antenna tuner.  
Or you could use a 1:4 balun (Hi-imped un/Lo-imped bal) at the antenna base  
with a ground under the antenna and then use 450 ohm ladder-line.

73, KG7BK, CecilMoore@delphi.com

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Date: Sun, 3 Apr 1994 13:54:18 GMT  
From: ihnp4.ucsd.edu!usc!cs.utexas.edu!gerald@cc.utexas.edu!  
portal.austin.ibm.com!awdprime.austin.ibm.com!news@network.ucsd.edu  
Subject: Info wanted on HT antennas  
To: ham-ant@ucsd.edu

I have a FT-530, and I would like to upgrade the antenna. I'm interested in  
finding out what others have upgraded to before putting  
any money down on a new antenna. I'm interested in a dual-band  
antenna, but performance is my primary concern.

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End of Ham-Ant Digest V94 #90

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